IN THE CLAIMS:

Claims 2, 9, 10, 12, 14, 15, 17-21, and 23 were previously cancelled. Claims 1 and 22 have been amended herein. New claims 24-26 are presented herein. All of the pending claims 1, 3-8, 11, 13, 16, 22, and 24-26 are presented below. This listing of claims will replace all prior versions and listings of claims in the application. Please enter these claims as amended.

Listing of the Claims:

1. (Currently amended) A recombinant receptor comprising:

an extracellular ligand-binding domain of a mammalian receptor; and

a cytoplasmic domain comprising a domain derived from a cytoplasmic domain of a mammalian receptor, at least one activation site and a heterologous bait polypeptide heterologous to the domain derived from a cytoplasmic domain of a mammalian receptor;

wherein said cytoplasmic domain comprises a JAK binding site; and

wherein the activation of said recombinant receptor is inhibited by binding of a fusion protein to said heterologous bait polypeptide, said fusion protein comprising a prey polypeptide and at least one of an inhibitor of the activation of said recombinant receptor and a recruitment site for the inhibitor of the activation of said recombinant receptor.

2. (Cancelled).

3. (Previously presented) The recombinant receptor of claim 1, wherein said recombinant receptor is activated by the addition of a compound that disrupts an interaction between said heterologous bait polypeptide and said prey polypeptide.

4. (Previously presented) The recombinant receptor of claim 1, wherein said recombinant receptor is a homomultimerizing receptor.

5. (Previously presented) The recombinant receptor of claim 1, wherein said recombinant receptor is a heteromultimerizing receptor.

6. (Previously presented) The recombinant receptor of claim 1, wherein the binding of said prey polypeptide depends upon a modification state of said heterologous bait polypeptide.

7. (Previously presented) The recombinant receptor of claim 6 wherein the modification state comprises presence or absence of phosphorylation, acetylation, acylation, methylation, ubiquitinilation or glycosylation.

8. (Previously presented) The recombinant receptor of claim 6, wherein a change of the modification state is dependent upon binding of a ligand to the extracellular ligand-binding domain.

9-10. (Cancelled).

11. (Previously presented) A vector encoding the recombinant receptor of claim 1.

12. (Cancelled).

13. (Previously presented) A eukaryotic cell comprising the recombinant receptor of claim 1.

14-15. (Cancelled).

16. (Previously presented) A cloning vector encoding a recombinant receptor, comprising:

a nucleotide sequence encoding a cytoplasmic domain of a mammalian receptor, wherein the nucleotide sequence comprises at least one restriction site configured to allow an in frame fusion of a nucleic acid sequence encoding a bait polypeptide, wherein insertion of the nucleic acid sequence encoding said bait polypeptide results in the vector of claim 11.

17-21. (Cancelled).

22. (Currently amended) A recombinant transmembrane receptor, comprising:

a cytoplasmic domain comprising an intracellular domain derived from a mammalian receptor, a bait polypeptide and an activation site, and a JAK binding site, wherein an interaction of a prey polypeptide with the bait polypeptide prevents the activation site from activating the recombinant transmembrane receptor; and

an extracellular domain having a ligand binding domain derived from a mammalian receptor, wherein binding of a ligand to the ligand binding domain activates the recombinant transmembrane receptor upon disruption of the interaction between the prey polypeptide and the bait polypeptide;

wherein the bait polypeptide is heterologous to the intracellular domain.

23. (Cancelled).

24. (New) The recombinant receptor of claim 1, wherein the cytoplasmic domain of a mammalian receptor naturally comprises a JAK binding site.

25. (New) The recombinant receptor of claim 1, wherein the at least one of an inhibitor of the activation of said recombinant receptor is selected from the group consisting of a member of the SOCS family, a JAK phosphatase, and a STAT phosphatase.

26. (New) The recombinant receptor of claim 24, wherein the at least one of an inhibitor of the activation of said recombinant receptor is selected from the group consisting of a member of the SOCS family, a JAK phosphatase, and a STAT phosphatase.